ABSTRACT OF THE DISCLOSURE

An ink cartridge 10 of the invention has a sensor 17 to detect the presence or the absence of ink. A control device 22 of a printer 20 transmits a detection command and a specified detection condition to the ink cartridge 10 by radio communication. In response to input of the detection command into the ink cartridge 10, a sensor controller 19 actuates and vibrates the sensor 17 under the specified detection condition. The sensor 17 is attached to a resonance chamber 18, which is disposed in an ink chamber 16. The frequency of the vibration of the sensor 17 is thus regulated by a resonance frequency of the resonance chamber 18. The resonance frequency is varied by the presence or the absence of ink in the resonance chamber 18. Detection of the resonance frequency accordingly specifies the presence or the absence of ink in the resonance chamber 18 and thereby the remaining quantity of ink in the ink cartridge 10. The control device 22 of the printer 20 receives the result of the detection together with the detection condition from the ink cartridge 10, and checks whether or not the detection has been carried out under the specified detection condition, in order to verify the validity of the detection result. This technique of the invention is generally applicable to a cartridge that holds a recording material used for printing therein, for example, an ink or a toner, and detects the state of the recording material. The arrangement flexibly handles the change in detection condition and ensures the sufficiently high reliability of the detection.